

CLAIMS:

1. A method of splicing tapes having an adhesive coating, the method comprising the steps of:

driving a first tape supplied from a first tape supply reel past a splicing area, the splicing area including at least two rollers movable between a closed position in which contact is made with tape in the splicing area, and an open position in which contact is not made with any tape in the splicing area;

introducing a second tape from a second tape supply reel into the splicing area when the rollers are in the open position; and

pressing the first and second tapes together with the rollers, to cause the first and second tapes to adhere together, one on top of the other.

2. A method of splicing tapes according to Claim 1 including the steps of monitoring the amount of tape remaining on the first reel and moving the rollers in the splicing area into the closed position when the amount of tape remaining on the first reel falls to a predetermined level.

3. A method of splicing tapes according to Claim 1 wherein at least one of the first or second tapes is coated with adhesive on one side.

4. A method of splicing tapes according to Claim 1 the method further including the step of:

cutting the first tape after the tapes have been joined.

5. A method of splicing tapes according to Claim 1 , the method further including the step of moving the

rollers to the open position after the tapes have been joined.

6. A method of splicing tapes according to Claim 2 wherein the step of monitoring the amount of tape remaining on the first reel is automated.

7. A method of splicing tapes according to Claim 2 wherein the step of moving the rollers to the closed position when the amount of tape remaining on the first reel falls to a predetermined level is automated, and is based on the automatic monitoring of the amount of tape remaining on the first reel.

8. A method of splicing tapes according to Claim 4 wherein the step of cutting the first tape is automatic, and is performed when a predetermined time has elapsed with the rollers in the closed position.

9. A method of splicing tapes according to Claim 2 wherein the step of monitoring the amount of tape on the first reel comprises the steps of:

- resting circumferentially on the reel an arm, one end of which is pivotally mounted on a rotary potentiometer, so that as tape is dispensed from the reel, and its diameter reduces, the arm is displaced pivotally;

- monitoring the change in potential difference across the potentiometer;

- using the said change in potential difference across the potentiometer to determine the amount of tape remaining on the reel.

10. A method of splicing tapes according to Claim 2 wherein the step of monitoring the amount of tape on the first reel comprises the steps of:

resting circumferentially on the reel an arm,
provided with a metal target, so that as tape is
dispensed from the reel, and its diameter reduces, the
arm is displaced;

providing an inductive sensor in the proximity of
the metal target;

monitoring the load on the inductive sensor;

using the load on the inductive sensor to determine
the amount of tape remaining on the reel.

11. An apparatus for supplying a continuous length of
adhesive tape from reels carrying discrete amounts of
adhesive tape, the apparatus comprising:

a splicing unit, including a tape path for conveying
tape, and at least two rollers, being movable between an
open position in which the rollers do not come into
contact with the tape path and a closed position in which
the rollers contact the tape path to join together tapes
from different reels in use.

12. An apparatus for supplying a continuous length of
adhesive tape according to Claim 11 wherein there is
further provided first and second tape dispensers, for
holding first and second reels of adhesive tape,
respectively, wherein the splicing unit further includes
at least one reserve tape retaining means, for retaining
a leading edge of a tape from one of the first or second
reels as a reserve reel.

13. An apparatus for supplying a continuous length of
adhesive tape according to Claim 12 wherein the other of
the first or second reels, as a currently-supplying reel,
is provided with an automatic monitoring system for
monitoring the amount of tape held on the reel.

14. An apparatus for supplying a continuous length of adhesive tape according to Claim 13 wherein the monitoring system is connected to a control unit, which is arranged to move the rollers from the open position to the closed position when a signal from the monitoring system indicates that the amount of tape held on the currently-supplying reel has reached a predetermined low level.

15. An apparatus for supplying a continuous length of adhesive tape according to Claim 14 wherein the control unit also controls the reserve tape retaining means, for allowing a tape held thereon to become released therefrom when the rollers move into the closed position.

16. An apparatus for supplying a continuous length of adhesive tape according to Claim 14 wherein the control unit actuates a cutting mechanism, for cutting a tape from a currently-supplying reel when the rollers are in the closed position.

17. An apparatus for supplying a continuous length of adhesive tape according to Claim 16 wherein the cutting is activated a predetermined time after the rollers have been moved into the closed position.

18. An apparatus for supplying a continuous length of adhesive tape according to Claim 14 wherein the control unit may return the rollers into the open position a predetermined time after they moved into the closed position.

19. An apparatus for supplying a continuous length of adhesive tape according to Claim 13 wherein the monitoring unit comprises:

an arm pivotally mounted on a portion of casing, for positioning circumferentially on a reel of tape, and a rotary potentiometer attached pivotally to one end of the arm, so that as the arm falls, the potential difference across the potentiometer will vary according to the position of the arm, for determining the amount of tape remaining on a reel.

20. An apparatus for supplying a continuous length of adhesive tape according to Claim 13 wherein, the monitoring unit comprises:

an arm having a metal target, pivotally mounted on a portion of casing, for positioning circumferentially on a reel of tape, and in the proximity of an inductive sensor, so that as the arm falls, a different loading on the inductive sensor is produced, for determining the amount of tape remaining on a reel.

21. An apparatus for supplying a continuous length of adhesive tape according to Claim 13 wherein a DC output is produced by the monitoring unit which may then be input into a control unit.

22. A tape splicing apparatus for splicing together tapes from different tape supply reels, the apparatus comprising:

a splicing station, having a first tape input path along which tape is arranged to pass from a first tape supply reel to a common tape output, and a second tape input path along which tape is arranged to pass from a second tape supply reel to the common tape output, wherein the splicing station has at least a pair of nip rollers movable between a first, open configuration in which the rollers are spaced apart, and a second, closed configuration, in which the rollers come together to urge

the tape portions from the first and second input paths into contact, one on top of the other;

wherein one of the first and second tape supply reels is arranged as a current reel and the other reel is arranged as a standby reel;

wherein the apparatus comprises means arranged in use to determine the quantity of tape remaining on the current reel and/or the estimated time remaining before the tape supply on the current reel is exhausted; and

wherein, based upon said determination, the apparatus is arranged to move the nip rollers from the first position to the second position to cause the tapes to adhere to one another.

23. A tape splicing apparatus according to Claim 22 wherein the apparatus further provides cutting means, arranged to cut the tape from the current reel thereby to replace the current reel with the standby reel.